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Federal Communications Commission
Office of the Secretary

BEFORE THE
Federal Communications Commission
WASHINGTON, D. C.

In the Matter of

Advanced Television Systems
and Their Impact on the Existing
Television Broadcast Service

Review of Technical and Operational
Requirements: Part 73-E, Television
Broadcast Stations

Reevaluation of the UHF Television
Channel and Distance Separation
Requirements of Part 73 of the
Commission's Rules

MM Docket No. 87-268
RM-5811

To the Commission:

COMMENTS OF COX ENTERPRISES, INC.

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November 18, 1987

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SUMMARY OF COMMENTS

High definition television ["HDTV"] is the television technology of the future. Prompt Commission action is necessary to ensure that HDTV becomes universally available on video delivery systems throughout the country. The Commission should promptly announce its intention of establishing a single HDTV standard usable by all video program delivery systems, and should thereafter move expeditiously to develop that standard. The Commission should not, however, rely on market forces to produce an HDTV standard. Consumer choices will be maximized if the Commission adopts a single HDTV standard.

Although it is too early to resolve the complex technical issues associated with development of an HDTV standard, certain fundamental principles should guide its formulation. First, it should accommodate the technical parameters of NTSC equipment. Second, it should be the product of multi-industry deliberations and be compatible with requirements of both the broadcasting and cable industries. And finally, it must achieve picture quality comparable to that produced by other possible ATV systems.

The Commission should not reallocate spectrum which is potentially necessary for HDTV until it has resolved the technical issues associated with adoption of an HDTV standard. Because land mobile interests have failed to document a claimed immediate need for UHF frequencies, reallocation decisions can be postponed consistent with the public interest until the Commission has a complete record concerning possible use of those frequencies for HDTV. Such a record would afford the basis for rational, fully-documented spectrum allocation.

CEI does not urge an indefinite delay in a decision herein. It suggests only that the Commission afford itself whatever time is necessary to a complete, reasoned decision concerning the complex issues associated with the introduction of HDTV in this country.

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To the Commission:

COMMENTS OF COX ENTERPRISES, INC.

Cox Enterprises, Inc. ["CEI"], by its attorneys,
submits herewith its Comments in response to the Commission's
Notice of Inquiry in the above-captioned proceeding.^{1/}

Introduction

The Commission's Notice^{2/} institutes a

1/ Notice of Inquiry, MM Docket No. 87-268, 2 FCC Rcd. 5125 (1987) ["Notice"]. CEI subsidiaries are licensees of television stations as well as operators of cable television systems. CEI thus has a significant interest in Commission action which facilitates expeditious implementation of a fully competitive domestic HDTV system which can be used by both off-air broadcast and cable television.

2/ The Notice was issued in response to a "Petition for Notice of Inquiry" (RM-5811) filed by 58 interested parties, including CEI. That Petition demonstrates the significance
(continued...)

comprehensive inquiry into the myriad issues surrounding advanced television ["ATV"] systems.^{3/} By the Notice and related actions,^{4/} the Commission has recognized the serious implications of high definition television ["HDTV"] for the future of video viewing in American homes. CEI commends the Commission for its prompt response to a matter of immediate public interest concern.

Comments filed this date on behalf of the Association of Maximum Service Telecasters ["MST"] include a comprehensive discussion of the principal technical and policy issues raised by the Notice. CEI generally endorses

2/ (...continued)
and complexity of issues relating to HDTV spectrum allocation and the establishment of an effective HDTV standard, as well as the compelling competitive considerations which call for their expeditious but thorough consideration and resolution by the Commission. Its arguments thus need not be repeated here.

3/ The Notice uses ATV as a term which encompasses various technologies which produce television pictures with a technical quality superior to that now available on existing NTSC receivers. Included are improved NTSC and enhanced 525-line systems which do not require more than the 6 MHz channels now used by television stations, as well as HDTV systems which generally involve use of more than 6 MHz of spectrum. Because of the importance of and controversy surrounding spectrum allocation issues unique to HDTV, these Comments focus on HDTV issues rather than on considerations relating to systems which simply enhance the existing NTSC signal.

4/ See Order, Gen. Docket No. 85-172, FCC 87-327 (October 21, 1987) (deferring action in the rulemaking proceeding concerning further sharing of the UHF Television Band by land mobile services) ["Deferral Order"]; Public Notice, "Chairman Patrick Names Advanced Television Service Advisory Committee" (October 9, 1987); Order, RM-5811 (July 17, 1987) (temporarily freezing the TV Table of Allotments in certain areas).

and supports those Comments, and thus will not burden the record herein with a reiteration of MST's arguments.

Instead, these Comments emphasize several fundamental considerations which CEI believes must play a prominent role in the Commission's deliberations. HDTV is a technology which the United States viewing public will not only accept but demand. It is thus incumbent upon the Commission to adopt a uniform national standard for HDTV so that the United States' broadcasting and cable industries can effectively respond to that demand. Given the investment of the public and affected industries in NTSC equipment, it is essential that such a standard be NTSC-compatible. Moreover, given the various industries which are involved in the provision of television service to the United States viewing public, it is also important that the standard adopted reflect a consensus among the various industries which are directly affected by HDTV. Finally, since selection of a standard is inextricably intertwined with spectrum allocation, the Commission must not allocate spectrum in advance of basic decisions concerning HDTV's future in this country: to do so would be to prejudge those decisions.

Commission Action Facilitating Nationwide
Introduction of HDTV
Is Demanded by the Public Interest

Although it is still at a developmental stage, HDTV has already established that it is the television technology of the future. The technical quality of HDTV television

pictures and sound represents a quantum leap from that now available on conventional NTSC receivers. Pictures are comparable to those available on 35 mm film; audio quality may ultimately compare to that available on compact discs.

Experience demonstrates that consumers will demand better quality program service as it becomes available. Black and white television was universally acceptable until color television was introduced. The decline of AM broadcasting paralleled public recognition that AM stations could not provide the same high degree of broadcast fidelity as FM stations. Demand for monaural audio systems gave way to stereo, and that is being replaced by an overwhelming demand for equipment capable of exploiting compact disc technology. Consumers find monophonic television sound inadequate when compared to TV stereo. In the same way, once consumers have seen HDTV -- and given the development and planned introduction of Japan's MUSE system that is only two or three years away -- that will be the standard against which television technical performance is judged. The public, in short, will be eager to embrace the technological advantages of HDTV.

The public can best be provided those technological advantages if the Commission adopts a single national HDTV standard for use by all domestic video delivery media. At present, the United States enjoys a sophisticated, diverse video program delivery system composed principally of local

broadcast stations, cable television systems and VCR's. A unified national policy concerning HDTV, incorporating a single technical standard, will facilitate the continued development and growth of that system. And that, in turn, will maximize viewer options and thereby further the public interest in the best possible television service. Moreover, this would give consumers the confidence that their purchase of next generation home viewing equipment will operate without regard to program delivery method.

The Commission Should Adopt One HDTV Standard

Recent Commission actions reflect a preference for reliance on marketplace forces.^{5/} CEI generally supports such decisions and agrees that in many instances the marketplace can more efficiently achieve regulatory goals than governmental restrictions. However, in certain circumstances involving the introduction of highly complex technology into competitive markets, regulation may be necessary to ensure effective exploitation of technological advances. HDTV involves such circumstances. The Commission and the public cannot afford to rely on the marketplace to produce, quickly, a workable, universally available standard for a technology as important and complex as HDTV.

^{5/} See, e.g., Report and Order, MM Docket No. 83-670, 98 FCC 2d 1076 (1984), reconsidered, 60 RR 2d 526 (1986), aff'd in part, Action for Children's Television v. FCC, No. 86-1425, slip op. (D.C. Cir., June 26, 1987); Report and Order, BC Docket No. 82-374 (November 1, 1983); Report and Order, MM Docket No. 85-357, FCC 86-132 (1986); Policy Statement and Order, MM Docket No. 83-842, FCC 85-25 (February 5, 1985).

Experience, again, establishes the validity of this assertion. The history of AM stereo^{6/} -- which promised much but failed because the market could not agree on a single standard -- teaches that market forces, while effective regulatory substitutes in some instances, are inadequate to ensure full fruition of an emerging technology in an environment in which delay in practical implementation harms the public. By contrast, the successful introduction and growth of color television demonstrates that Commission standard-setting^{7/} can facilitate optimum exploitation of technological breakthroughs and manufacturing economies of scale.

HDTV is the most advanced technological breakthrough which the television industry has encountered in recent years. If the benefits of that breakthrough are to be fully enjoyed by the viewing public, the Commission must lead the way by adopting a uniform standard to channel technological innovation and thus permit its prompt operational implementation by all video program delivery systems. HDTV may never develop to its full potential in this country, and U.S. consumers may never enjoy its full

6/ See Report and Order, Docket No. 21313, 51 RR 2d 1 (1982) ["AM Stereo Report"]. The lack of Commission-imposed standards may also have contributed to the failure of teletext to enjoy significant market success. See Report and Order, BC Docket No. 81-741, 53 RR 2d 1 (1983).

7/ See Report and Order, Docket No. 10637, 41 FCC 658 (1953) ["Color Television Report"].

benefits, unless the Commission adopts a single HDTV standard.

Indeed, Commission adoption of a single HDTV standard will permit the various domestic video delivery systems to expand consumer options by giving them access to various domestic video delivery systems. With a single HDTV standard, competition can focus on diversity in program services rather than on technical issues. Consumers will be able use a single type of equipment to choose from among multiple video services; they will not be forced to use separate equipment for different video services. The marketplace will thus ultimately be enhanced if the Commission foregoes reliance on market forces to establish an HDTV standard.

Furthermore, the uncertainties of a protracted marketplace solution would almost certainly result in "wrong" purchase decisions by consumers who have no basis for comparative analysis among non-compatible alternatives.

The Commission clearly has the authority to establish such a standard. Its powers under the Communications Act of 1934, as amended, are "...not niggardly but expansive." National Broadcasting Co. v. United States, 319 U.S. 190, 219 (1943). For example, Section 303, among other measures, empowers the Commission to "prescribe the nature of the service to be rendered by each class of licensed stations and each station within any class;" to

"regulate the kind of apparatus to be used with respect to its external effects and the purity and sharpness of the emissions from each station and from the apparatus therein;" and to "study new uses for radio, provide for experimental uses of frequencies, and generally encourage the larger and more effective use of radio in the public interest." 47 U.S.C. Secs. 303(b), (e) and (g). Such provisions clearly afford the Commission ample authority to establish new standards for emerging technology.^{8/}

Thus, the appeal of the Commission's decisions establishing its first color television standard^{9/} did not involve a challenge to Commission authority to adopt the standard: "All parties agree[d], as they must, that...the Commission has power...to promulgate standards for transmission of color television that result in rejecting all but one of the several proposed systems." Radio Corp. of America v. United States, 341 U.S. 412, 416 (1951). Subsequently, the Commission relied without discussion on Section 303 when it adopted its final color television standards in 1953. Color Television Report, supra, 41 FCC at 671. Commission action in its AM Stereo proceeding also

^{8/} Establishing such standards would also be consistent with the declaration of national policy set forth in Section 157 of the Communications Act: "It shall be the policy of the United States to encourage the provision of new technologies and services to the public." 47 U.S.C. Sec. 157.

^{9/} First Report of the Commission, Dockets Nos. 8736 et al., 41 FCC 1 (1950); Second Report of the Commission, Dockets Nos. 8736 et al., 41 FCC 111 (1950).

relied on Section 303(r) of the Act, which grants general rulemaking power. 47 U.S.C. Sec. 303(r). The Commission, in short, has expansive authority with respect to regulation of emerging technology.^{10/} That authority clearly encompasses establishment of a new standard for HDTV.

Guidelines for an HDTV Standard

Development of an HDTV standard will require delicate balancing of conflicting policy and technical considerations. At this stage, when technical questions are as yet unresolved, it is premature to suggest precise parameters of an HDTV standard. Nonetheless, there are several fundamental considerations which should guide its formulation.

NTSC-Compatibility. The public has a tremendous investment in NTSC video equipment.^{11/} Commission action should not make this investment obsolete. The public interest requires an HDTV standard which will protect it: the standard which is ultimately adopted must involve an NTSC-compatible format capable of being delivered by existing

^{10/} See Rogers Radio Communication Services v. FCC, 593 F.2d 1225, 1230 (D.C. Cir. 1978), where the court upheld Commission authorization of experimental cellular operations, noting that once it had information from those operations, "...the Commission can set standards for cellular systems to insure that their operation will serve the public interest, convenience and necessity."

^{11/} For example, according to Television & Cable Factbook, Cable & Services Volume, No. 55 (1987), there were 22,163,081 television receivers sold to dealers in 1986 alone. MST estimates that there are 130 million existing NTSC receivers. MST Petition for Notice of Inquiry, February 13, 1987, at 6.

video delivery systems without obsoleting existing video equipment.

Incompatibility of existing receivers and the Commission's initial noncompatible color television standard was a critical factor in the decision to replace that standard with a compatible one. Color Television Report, supra, 41 FCC at 669. Similar considerations support adoption of an NTSC-compatible HDTV standard. Various NTSC-compatible HDTV systems are under development.^{12/} The Commission should encourage their further development through adoption of a standard which accommodates the technical parameters of NTSC equipment. Such a standard will maximize consumer choices while minimizing consumer costs by facilitating reception of multiple video services on a single type of equipment without obsoleting existing equipment.

Multi-Industry Involvement. Local television broadcast stations are not the only providers of video service in this country. Cable television, videocassettes and potentially, DBS, all participate or will participate in providing video service to the public. All will be affected by the introduction of HDTV.

Because HDTV will impact multiple industries, it is important that they all be involved in formulating an operational standard. Consumers will be best served if their

^{12/} For example, North American Philips Corporation and the New York Institute of Technology both are developing HDTV systems which could be displayed on NTSC receivers.

next generation of home video equipment is compatible with all program delivery methods. By contrast, the public interest will be disserved if consumers must purchase separate equipment to accommodate individual sources of programming. The Commission's HDTV standard must be the product of deliberations by all affected industries: multi-industry involvement and consensus are critical to HDTV's ultimate success in this country. In particular, given the significance of both off-air broadcasting and cable television in the provision of video programming to the public, whatever HDTV standard is adopted must be compatible with both broadcasting and cable industry requirements.

Picture Quality. The first HDTV system inevitably becomes the model against which the technical quality of subsequent HDTV and other ATV systems are judged. At present, it appears that the Japan Broadcasting Corporation ["NHK"] MUSE system, which is not NTSC-compatible, will be the first fully operational HDTV system: NHK anticipates its commercial introduction in Japan in 1990. MUSE-capable videocassette equipment may become available in the United States at approximately the same time.

If the technical quality of a domestic NTSC-compatible ATV or HDTV system is not comparable to MUSE or other available technology, it will not succeed. The public

should not be asked to accept second-rate technical service if first-rate service is possible.^{13/}

The Commission's HDTV standard should therefore ensure picture quality comparable to that produced by other possible HDTV systems. More specifically, that standard must not significantly compromise picture quality compared to advanced television systems which are not NTSC-compatible. An NTSC-compatible standard which produces picture quality below that of other ATV systems will relegate media forced to employ it to second-class status. Media which cannot accommodate HDTV systems which deliver a better quality signal to consumers will be unable to compete effectively against those which can, with the consequence that the level of service which can be provided to the public will suffer.

**The Commission Must Not Jeopardize HDTV's Future
By Premature Spectrum Allocation Decisions**

Granting in part a "Petition for Special Relief" filed by MST, CEI and others in its Land Mobile-UHF sharing proceeding (Gen. Docket No. 85-172), the Commission has temporarily deferred a decision concerning possible reallocation of UHF spectrum for land mobile use. Deferral Order, supra. However, the deferral extends only until the Commission receives and considers the initial report of its

^{13/} One need only review the decline of AM radio and the corresponding growth of FM radio to confirm the accuracy of this assertion. See Report on the Status of the AM Broadcast Rules, Mass Media Bureau, FCC (April 3, 1986) RM-5532. See also, discussion supra at 4.

HDTV advisory committee and public comments thereon. Id. at par. 8.

CEI respectfully submits that deferral of UHF spectrum allocation decisions until the completion of rulemaking proceedings which may result from this inquiry is essential. Reallocation of UHF frequency for land mobile use would be a decision which could not in practice be reversed and which could jeopardize or even preclude full implementation of a nationwide terrestrial HDTV system.

Institution of HDTV on a nationwide basis by all video delivery systems under a single standard is clearly consistent with the public interest. Local broadcast stations have a long and distinguished record of service to their communities. Their ability to continue to provide this service and to respond to changing and growing community needs depends on their continued ability to compete effectively in the increasingly competitive video marketplace. And that, in turn, will depend upon their ability to fully accommodate new technology like HDTV.

At present, it appears that full accommodation of HDTV will require use of additional spectrum,^{14/} and that the

^{14/} See Hopkins, "Advanced Television Systems," 1987 NAB Engineering Conference Proceedings, at 5: "As a general rule, systems requiring the greatest bandwidth probably have the best performance. Likewise, systems using the least bandwidth probably have the poorest performance." Additionally, HDTV systems which utilize more spectrum may be able to more easily accommodate future technical improvements.

best available spectrum involves UHF frequencies already allocated for television broadcast use. The public interest requires a competitive environment in which all participants enjoy an equivalent opportunity to utilize HDTV. In order to permit off-air broadcasters the same chance to provide HDTV services to the public as other competing program delivery systems which can more easily accommodate HDTV, the Commission should not reallocate frequencies until it is clear that they are not needed for off-air HDTV transmissions.

Significantly, those frequencies are not immediately needed for land mobile use. The Commission's own studies demonstrate substantial inflation in the land mobile industry's claims of spectrum scarcity. See, e.g., "FOB 9/18/85 Working Paper on the 800 MHz Land Mobile Channel Occupancy;" "1986 FOB Monitoring Data (Atlanta);" Comments of MST on Commission Documents, Gen. Docket No. 85-172 (June 10, 1987). Indeed, Commissioner Quello agrees that "...the land mobile community has failed to demonstrate a need for

additional spectrum."^{15/} There is thus no compelling public interest reason to rush to reallocate.

If frequencies are reallocated and then subsequently prove necessary for the provision of broadcast HDTV (and, as noted, current technology indicates that this will be the case) institution of nationwide over-the-air local HDTV would forever be precluded, thereby disserving the public interest and transforming this inquiry and any subsequent rulemaking proceedings into futile paper exercises. The Commission itself recognized this to some extent in its Deferral Order, observing that "...the future of television technology is a matter of great importance and...we must have an adequate body of knowledge on which to base our decisions before foreclosing any options." Deferral Order, supra, at par. 8.

Given the lack of a demonstrated need for land mobile use of UHF spectrum, the likelihood that broadcast HDTV will require additional spectrum, and the obvious detriments of an irreversible immediate reallocation decision, spectrum clearly should not be reallocated until

^{15/} Deferral Order, supra, Concurring Statement of Commissioner Quello. See also Report and Order, Gen. Docket Nos. 84-1231, 1233 and 1234, 61 RR2d , 214 (1986): "Data submitted in the record leads one to question to what extent public safety/private land mobile licensees are using the spectrum that they are licensed. The data reveal that in major urban areas significant amounts of spectrum licensed to the public safety/private land mobile services actually remains unused or at best minimally used." (Separate Statement of Commissioner Quello).

the Commission has the benefit of a complete record concerning the technical and policy implications of HDTV.^{16/} That record should at a minimum include the report of the HDTV Advisory Committee and public comments thereon; comments and reply comments in this proceeding; and comments and reply comments in any rulemaking proceedings which result therefrom. At that point, the Advisory Committee's work would be completed and an HDTV standard established. The Commission will then have a complete factual basis for reasoned spectrum allocation decisions.

CEI urges only that the Commission allow sufficient time to come to a well-considered, prudent decision that it and the public will not later regret. It does not seek an indefinite delay. The Commission should bring this inquiry and subsequent rulemaking proceedings to an expeditious conclusion; it should not, however, do possibly irremedial harm by making premature spectrum allocation decisions.

CEI suggests that the Commission promptly announce its intention of adopting a uniform HDTV standard and simultaneously establish a target date for doing so. The date established must allow for a thorough but expeditious

^{16/} As Commissioner Quello stated in his concurring statement to the Deferral Order, "...I am less sanguine about the possibility of proceeding with land mobile sharing before the Committee has completed its work. It would seem that the interference standards adopted for the purposes of land mobile sharing would depend, at least in part, on the type of ATV system that is ultimately employed." Deferral Order, supra, Concurring Statement of Commissioner Quello.

consideration of the complex technical issues presented by HDTV: a rush to rash judgment may be worse than no judgment at all. Conversely, doing nothing is a judgment in itself.^{17/} Lack of Commission action may well result in the introduction of multiple noncompatible standards, to the detriment of the American viewing public. Following adoption of an HDTV standard (and contingent upon its parameters), the Commission can make an orderly determination with respect to remaining allocation issues affecting land mobile operations.

Conclusion

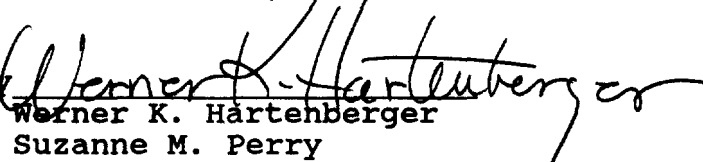
CEI applauds the Commission's prompt initiation of this inquiry and its apparent recognition of the tremendous implications of the imminence of HDTV. It urges the Commission to continue that recognition by resolving HDTV issues in a manner consistent with these Comments and those

^{17/} "Sometimes...what the Government does, or doesn't do, makes a big difference." Remarks of Alfred C. Sikes, Assistant Secretary for Communications and Information, U.S. Department of Commerce, before the Federal Communications Bar Association and the Editors of Broadcasting Magazine, The Four Seasons, Washington, D.C., Friday, June 19, 1987.

of MST, and, in particular, to act for the benefit of all Americans by establishing a single HDTV standard usable by all video program delivery systems.

Respectfully submitted,

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